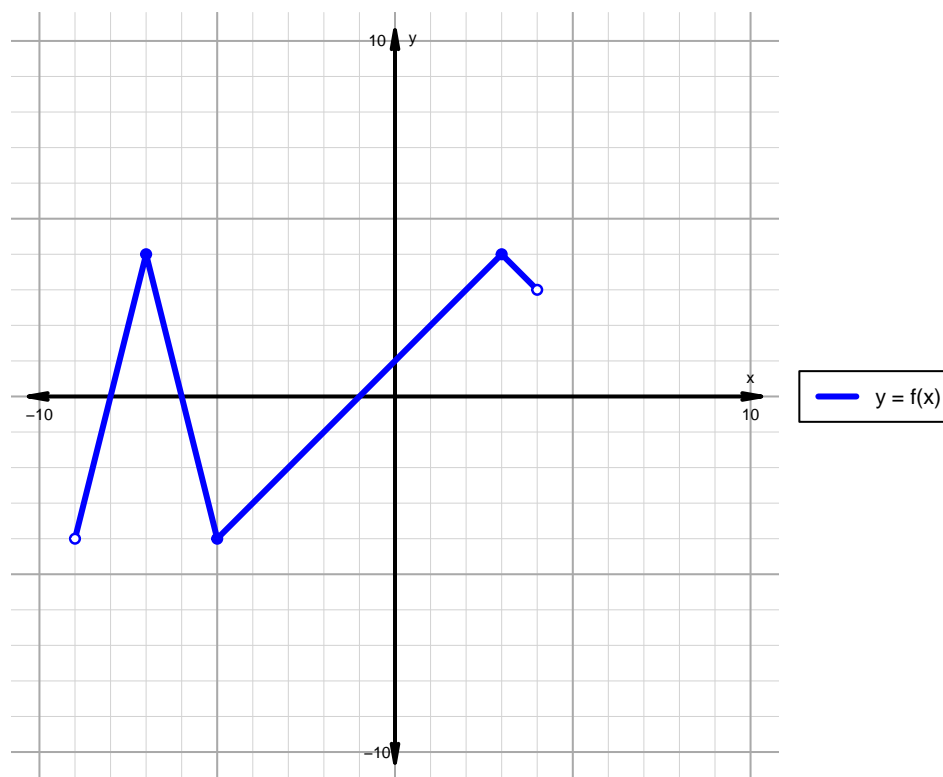


Name: \_\_\_\_\_

Date: \_\_\_\_\_

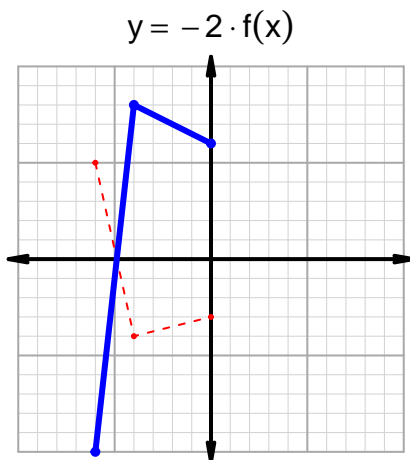
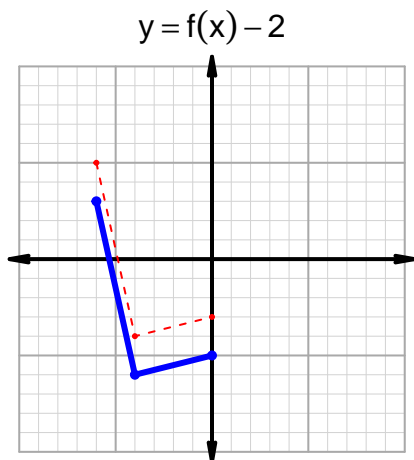
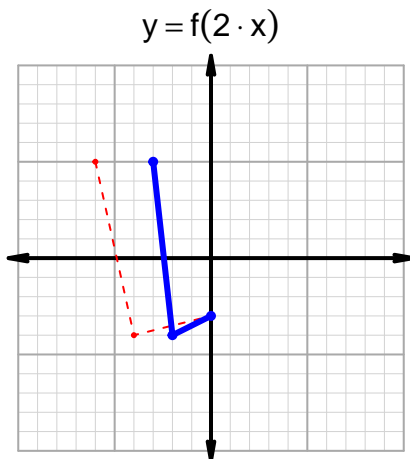
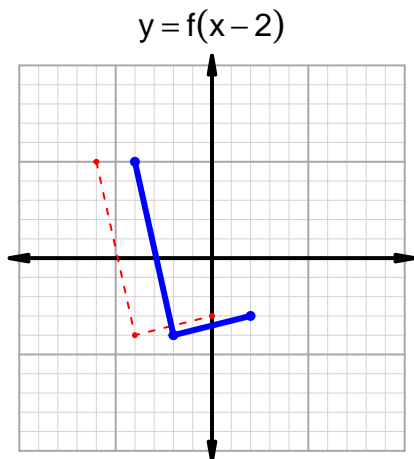
**Intervals, Transformations, and Slope Solution (version 46)**1. The function  $f$  is graphed below.

Indicate the following intervals using interval notation. Remember, you can use  $\cup$  between two intervals to indicate the union. Except for range, all intervals will indicate  $x$  values; this is standard.

Feature	Where
Positive	$(-8, -6) \cup (-1, 4)$
Negative	$(-9, -8) \cup (-6, -1)$
Increasing	$(-9, -7) \cup (-5, 3)$
Decreasing	$(-7, -5) \cup (3, 4)$
Domain	$(-9, 4)$
Range	$(-4, 4)$

## Intervals, Transformations, and Slope Solution (version 46)

2. In the four graphs below,  $y = f(x)$  is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function  $g$  be defined by the table below. Use the formula  $\frac{g(x_2) - g(x_1)}{x_2 - x_1}$  to find the average rate of change between  $x_1 = 25$  and  $x_2 = 52$ . Express your answer as a reduced fraction.

$x$	$g(x)$
25	66
52	90
66	52
90	25

$$\frac{f(52) - f(25)}{52 - 25} = \frac{90 - 66}{52 - 25} = \frac{24}{27}$$

The greatest common factor of 24 and 27 is 3. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{8}{9}$$